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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/698,588	10/31/2003	Daniel Joseph Lyons	CISCO-7727	1815
21921	7590	12/02/2004	EXAMINER	
DOV ROSENFELD 5507 COLLEGE AVE SUITE 2 OAKLAND, CA 94618			PERSINO, RAYMOND B	
			ART UNIT	PAPER NUMBER
			2682	

DATE MAILED: 12/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/698,588

Applicant(s)

LYONS ET AL.

Examiner

Raymond B. Persino

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-29, 32-45 and 48-50 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 18, 19, 33 and 34 is/are rejected.
- 7) ☒ Claim(s) 4-17, 20-29, 32, 35-45 and 48-50 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. ____.  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>2/17/04</u> .   | 6) <input type="checkbox"/> Other: ____.                                    |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 18 and 33 are rejected under 35 U.S.C. 102(b) as being anticipated by JAGAR (US 6,067,449 A).

Regarding claim 1, JAGAR discloses a method in a station of a wireless network, the method comprising: wirelessly receiving data via each of a plurality of antennas (110 and 112), the data corresponding to a packet of information transmitted from a remote station; sampling the received data corresponding to the received packet to form data samples (done by 318); determining a measure of signal quality from samples of the received data for each of the antennas; and selecting one of the plurality of receive antennas as the antenna for receiving from the remote station, the selecting according to the determined measure of signal quality (column 5 line 29 to column 7 line 25).

Regarding claim 18, JAGAR discloses an apparatus for inclusion in a station of a wireless network, the apparatus comprising: a plurality of antennas (110 and 112); a selector (336) to select one of the plurality of antennas; a radio receiver coupled to one of the plurality of antennas via the selector, the receiver to wirelessly receive data corresponding to a packet of information transmitted from a remote station, the receiver

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including an analog-to-digital converter (318) producing data samples of signals received at the station from the remote station corresponding to the packet; a signal quality calculator (324 and 334) coupled to the receiver to determine a measure of the received signal quality from samples of the received data from the remote station; and an antenna controller (330) coupled to the signal quality calculator and to the selector to select one of the antennas as the antenna for receiving from the remote station according to the calculated signal quality (column 5 line 29 to column 7 line 25).

Regarding claim 33, JAGAR discloses an apparatus in a station of a wireless network, the apparatus comprising: means for wirelessly receiving data via each of a plurality of antennas (110 and 112), the data corresponding to a packet of information transmitted from a remote station; means (318) for sampling the received data corresponding to the received packet to form data samples; means (324 and 334) for determining a measure of signal quality from samples of the received data for each of the antennas; and means(330 and 336) for selecting one of the plurality of receive antennas as the antenna for receiving from the remote station the selecting according to the determined measure of signal quality (column 5 line 29 to column 7 line 25).

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2, 19, and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over JAGAR (US 6,067,449 A) in view of SUGAWARA (US 5,339,452 A)

Regarding claim 2, see the rejection of claim 1 concerning the subject matter this claim depends from. However, JAGAR does not disclose that the determining of the measure of signal quality is prior to carrying out automatic gain control (AGC) for the data corresponding to the packet. SUGAWARA discloses that the determining of the measure of signal quality is prior to carrying out automatic gain control (AGC) (6) for the data corresponding to the packet (column 4 lines 11-24). Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made for the signal quality measurement to take place prior to an AGC. This is beneficial in that it allows the unadjusted signal to be measure, thus improving performance of the antenna selector.

Regarding claim 19, see the rejection of claim 18 concerning the subject matter this claim depends from. However, JAGAR does not disclose that the determining of the measure of signal quality is prior to carrying out automatic gain control (AGC) for the data corresponding to the packet. SUGAWARA discloses that the determining of the measure of signal quality is prior to carrying out automatic gain control (AGC) (6) for the data corresponding to the packet (column 4 lines 11-24). Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made for the signal quality measurement to take place prior to an AGC. This is beneficial in that it allows the unadjusted signal to be measure, thus improving performance of the antenna selector.

Regarding claim 34, see the rejection of claim 33 concerning the subject matter this claim depends from. However, JAGAR does not disclose that the determining of the measure of signal quality is prior to carrying out automatic gain control (AGC) for the data corresponding to the packet. SUGAWARA discloses that the determining of the measure of signal quality is prior to carrying out automatic gain control (AGC) (6) for the data corresponding to the packet (column 4 lines 11-24). Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made for the signal quality measurement to take place prior to an AGC. This is beneficial in that it allows the unadjusted signal to be measured, thus improving performance of the antenna selector.

5. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over JAGAR (US 6,067,449 A) in view of KISHIMOTO et al (US 2002/0118724 A)

Regarding claim 3, see the rejection of claim 1 concerning the subject matter this claim depends from. However, JAGAR does not disclose that the determining of the measure of signal quality is after to carrying out automatic gain control (AGC) for each of the antennas for the data corresponding to the packet. KISHIMOTO et al discloses that the determining of the measure of signal quality is after to carrying out automatic gain control (AGC) for each of the antennas for the data corresponding to the packet (see 107 of figure 6). Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made for the signal quality measurement to take place after an AGC. This is beneficial in that it allows the adjusted signal to be measured with AGC, thus the antennas are compared taking advantage of AGC.

***Allowable Subject Matter***

6. Claims 4-17, 20-29, 32, 35-45 and 48-50 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claims 4, 20 and 35, the applicant includes the subject matter of determining of the measure of signal quality includes determining a measure of the relative EVM from samples of the received data corresponding to part of the packet. NAKAO et al (US 2004/0014443 A1) discloses that EVM can be used as measure of signal quality. However, NAKAO et al does not disclose or suggest that EVM be used as measure of signal quality to based a antenna switching decision on. Instead, NAKAO et al suggests to use EVM as measure of signal quality to determine switching a modulation method. As such, this limitation, when considered with the remaining subject matter associated with the claims, comprises a unique combination of subject matter that is neither taught nor suggested by the prior art.

***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

NAKAO et al (US 2004/0014443 A1)

KANDALA (US 2003/0100282 A1)

ROZANSKI (US 5,530,926 A)

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Raymond B. Persino whose telephone number is (703) 308-7528. The examiner can normally be reached on Monday-Thursday from 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian C. Chin can be reached on (703) 308-6739. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Raymond B. Persino *RP*  
Examiner  
Art Unit 2682

RP

*Lee Nguyen*  
LEE NGUYEN  
PRIMARY EXAMINER